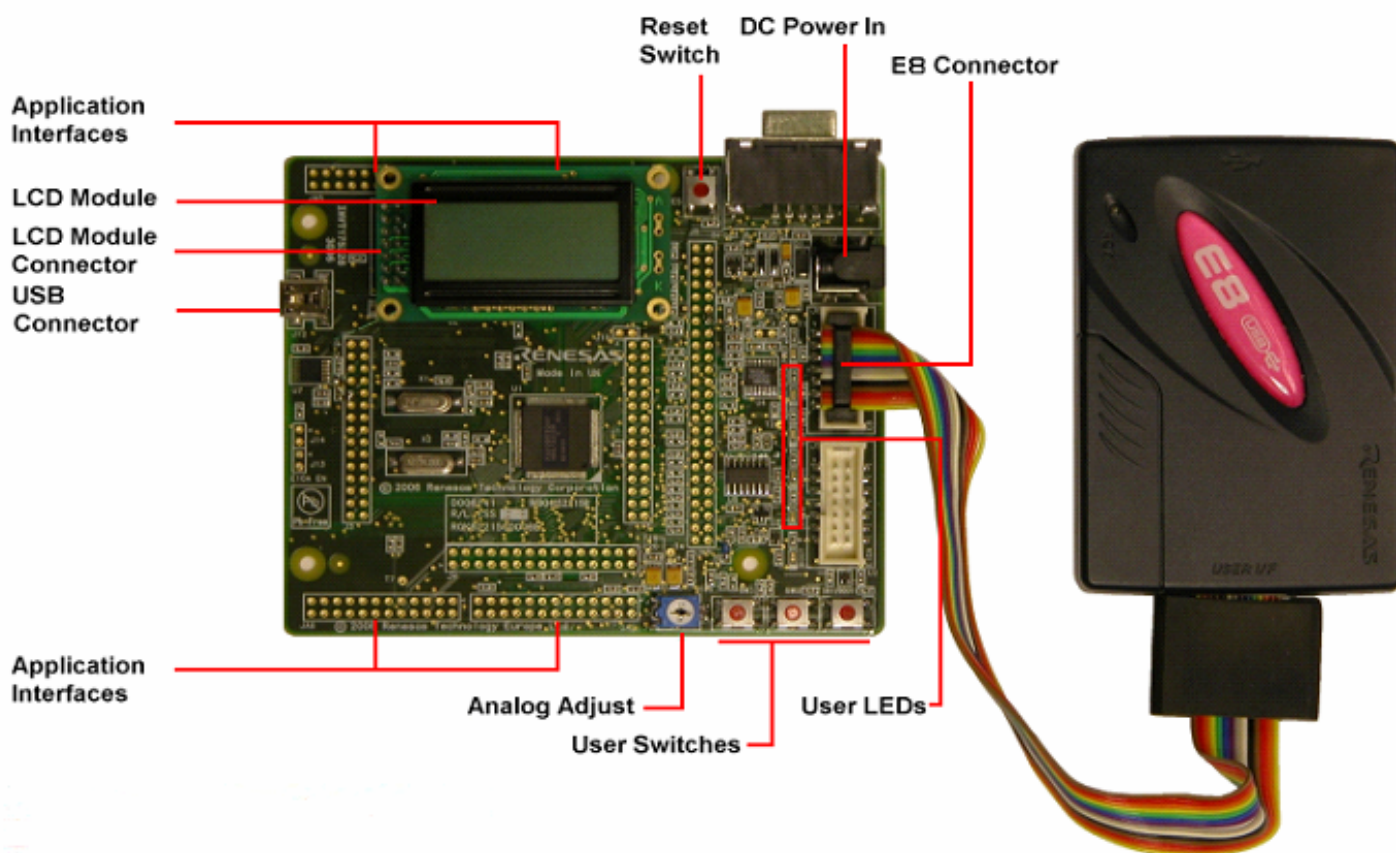Everywhere you imagine.

RENESAS

QuickStart

RSKH8S2215R
Renesas Starter Kit

1. Installation

<u>Do not connect the E8 debugger hardware until the software support has been installed.</u>

1. Insert the CD into your computer's CD-ROM drive. The CD should automatically run the installation program. If the installer does not start, browse to the RSK directory from the CD root folder and double click on 'setup.exe'.
2. Choose the desired setup language and click OK.
3. You will be presented with Welcome screen, Click <Next>.
4. The software licence agreement will be displayed, read and accept the license by clicking <Yes> to continue.
5. You will be asked to select your region, select appropriate region and click <Next>.
6. Select the software components to install. Following software components are recommended for RSKH8S2215R.

    *   High-Performance Embedded Workshop -> High-Performance Embedded Workshop online manuals
    *   H8SX/H8S/H8 Family -> H8S,H8300 Toolchains
    *   H8SX/H8S/H8 Family -> H8SX,H8S,H8300 Family Simulator Debugger
    *   H8SX/H8S/H8 Family -> Starter kit for H8S2215R
    *   Flash Development Toolkit FDT
    *   AutoUpdate utility

7. Unselect the remaining components. Click <Next> to continue.
8. The destination folder for HEW is specified on the next screen. It is recommended to accept the default path. Click <Next> to continue.
9. The destination folder for FDT is specified on the next screen. It is recommended to accept the default path. Click <Next> to continue.
10. The selected components will be displayed on this dialog. To confirm the selections click <Next>.
11. After completing the installation, you will be given a site code, click <Next>. You will receive the final dialog box, click <Finish>.
12. The Auto-update dialog box will be launched. Configure the Auto-update settings dialog to allow the installation to be checked for available updates.

2. Connection

13. Connect the E8 to the 'E8' connector on the RSK using the ribbon cable.
14. Plug in the LCD module to 'LCD' connector on the RSK ensuring that the pin 1 designation corresponds to the marking on the RSK.
15. Connect the E8 debugger to a spare USB port on your PC.

    The 'Found New Hardware' Wizard will appear. Please follow the steps below to install the drivers. Note that administrator privileges are required for a Windows™ 2000/XP machine.
16. For Windows XP Select the 'No, not this time' option and click <Next>.
17. Verify the "Recommended" option is selected and click <Next>. (Renesas E-Series USB Driver).
18. If using Windows XP, skip to step 20; otherwise click <Next>.
19. Click <Next> to install the driver.
20. Click <Finish> to close the wizard.

Note: The Windows driver signing dialog may be displayed. Please accept the driver to continue.

3. HEW Workspace

HEW integrates various tools such as compiler, assembler, debugger and editor into a common graphical user interface. To learn more on how to use HEW, open the HEW manual installed on your computer (Start Menu > Programs > Renesas > High-performance Embedded Workshop > Manual Navigator).

21. Launch HEW from the Start Menu.
22. In the "Welcome" dialog box: Verify "Create New Workspace" is selected. Click <OK>
23. In the "New Project Workspace" dialog box: Verify the "CPU Family" is set "H8S,H8/300". Select "RSKH8S2215R" from the left hand pane.
24. Enter a name for the workspace. The project name will be automatically completed with the Workspace name. You can change this name to 'Tutorial' if required. Click <OK>.
25. On the "RSKH8S2215R – Step 1" window: Select "Tutorial" and click <Next>.
26. On the "RSKH8S2215R – Step 2" window: Click <Finish>.
27. On the Project Generator Information window: Click <OK>.

    The project that is created has two configurations. The Release configuration compiles the project without any debugger support and can be used for the final release code version. The Debug configuration includes HMon debugger support code.
28. Select the 'Debug' build configuration in the left hand drop down list on the tool bar.

29. Click on the 'Build' icon to compile, assemble and link the project.

4. Programming and Debug

Before connecting to the RSK, HEW needs to know which device is being used so that the correct programming kernel can be used. To set this information, the Flash wizard needs to be invoked.

30. Click on the 'Configure Flash Project' button
31. The FDT configuration wizard will be launched.
32. Select the "H8S/2215RUF" device from the drop down list.

    In the kernels displayed it is very important to select the kernel with 'RSK' at the end of the name. This is because this kernel has been modified to support the debugger.
33. Accept all the default settings by clicking <Next> and then <Finish> to the end of the wizard.

    Note: Two warning dialogs will be displayed, accept the dialogs.
34. Select (<File> Save Workspace) from the main toolbar.

    The FDT settings have now been saved and it is time to attempt the initial connection to the board.

    The HEW workspace contains two debug sessions. The Default session does not include any debugger information. This can be used to add support for other debugging tools such as the Renesas E10A.
35. Select the "Session_H8S_2215R_HMon" session in the right hand drop down list on the tool bar. The Debug toolbar connection button should be active.
36. Click the <Connect> button on the debug toolbar.
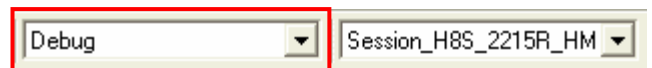
37. In the "Select Target Configuration File" dialog choose "H8s2215r.tcf" and click <OK>.
38. When asked if it is OK to assume only one E8 will be connected, click <Yes>.
39. If your E8 Firmware needs updating, a warning dialog will be displayed. Click <OK> to continue.
40. The message pane at the bottom of the workspace window will show details of current progress.

    Note: If this is the first time the E8 has been used in E8Direct mode then there will be a short delay and the Found New Hardware wizard will be invoked for a second time. This is to support the debugging function of the E8Direct mode. Please refer to the instructions below to install the different driver.
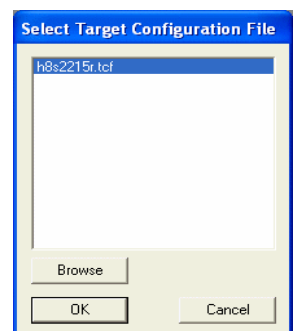
You may be prompted to select the USB device in a new dialog:

46. Click <OK> to select the 'E8DIRECT' USB device.

47. In the "E8 Direct Configuration" dialog box set the baud rate to 250000, select 'E8 Provides 5V' and 'Leave powered when disconnected.' Click <OK>.

48. If this is the first time you have connected to the RSK and all connections are correct then the connection will be completed, so go to step 63.

   Note: It is possible that a working HMon project is not programmed in to the device.

49. If the connection fails then you will be returned to the same configuration screen with the 'Abort' button enabled. Click <Abort>.
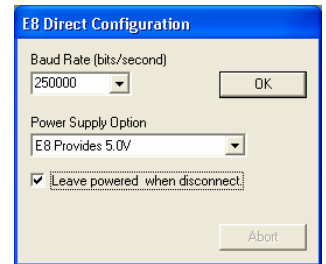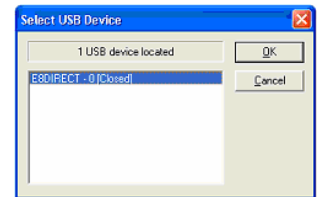
50. In the "Connection Error" dialog box, select "Download HMon using Boot Mode" and click <OK>.
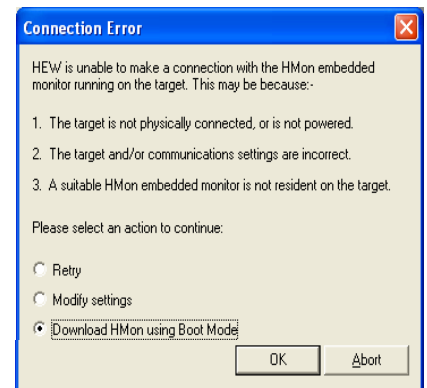
51. Click <OK> to any warning dialogs.
52. Click <Finish> in Boot Mode pin configuration dialog.

   Warning: Please ensure that the RSK is powered before connecting a USB cable to the USBDirect port. Failing to do this may damage the board.

53. Connect another USB cable to the USB connector on the RSK and spare USB port on your PC.
   Wait for the 'Found New Hardware' Wizard to appear. Follow the steps below to install the driver.
   Note that administrator privileges are required for a Windows™ 2000/XP machine.
54. For Windows XP Select the 'No, not this time' option and click <Next>.
55. Verify the "Recommended" option (USBDirect) is selected and click <Next>.
56. If using Windows XP, skip to step 58; otherwise click <Next>.
57. Click <Next> to install the driver.
58. Click <Finish> to close the wizard.

59. Ensure '0x000D – 1 [Closed]' is selected and click <OK>.
60. HMon will program the device in Boot mode and then swap back to User mode.
61. A debug connection will then be attempted. If the connection fails the "Connection Error" dialog will be re-displayed. Re-check the settings and connections and try again.
62. When 'Download Operation finished' is displayed in the message pane at the bottom of the workspace, disconnect the USB cable from the 'USB' connector on the RSK.
63. Right click on the projectname.abs file listed in the download modules area of the Workspace view and select 'Download'.
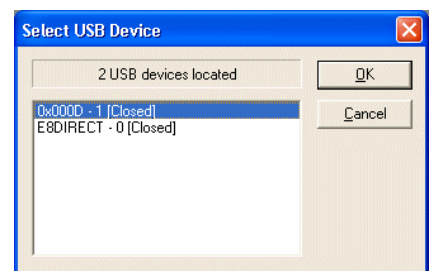
64. In the HMON Configuration dialog select 'Compare with cache' and Click <OK>.
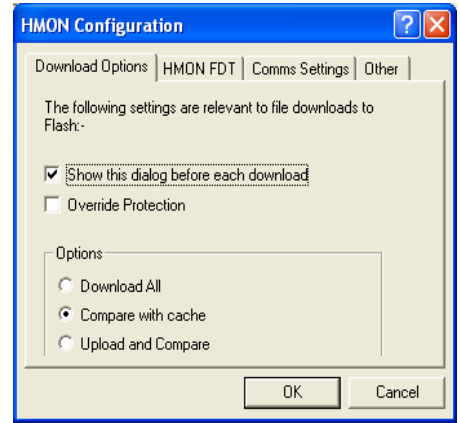
65. The code will be downloaded to the device.

66. Click the 'Reset – Go' button.

67. The code will run and you will see the LEDs flash on the board.

68. Click the 'Stop' button.

The code will stop and the source code opened at the current program counter.

5. Next Step

After you have completed this quick start procedure, please review the tutorial code and sample code that came with the kit. You can add projects to the current workspace by selecting (Project > Insert Project) from the main menu. The tutorials will help you understand the device and development process using Renesas Development Tools.

The Hardware manual supplied with this RSK is current at the time of publication. Please check for any updates to the device manual from the Renesas internet site at: www.renesas.com/renesas_starter_kits

6. Renesas H8 Compiler

The version of the compiler provided with this RSK is fully functional but time limited. You have 60 days to evaluate the full product before the compiler will limit the code linker to 64k bytes.

7. Support

Online technical support and information is available at: www.renesas.com/renesas_starter_kits

Technical Contact Details

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Japan: csc@renesas.com